

Example #2. A 150 kg object is pulled at constant velocity over a horizontal surface ($\mu = 0.12$) for a distance of 7.0 m. How much heat energy was generated?

$$W = F_f d = \mu F_N d \Rightarrow F_N = F_g \text{ on horizontal surface}$$

$$\begin{aligned} \therefore W &= \mu F_g d \\ &= .12(150)(9.8)(7) \end{aligned}$$

$$W = 1.2 \times 10^3 \text{ J}$$